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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,697	11/24/2003	Yoshihiko Taira	117836	1277
25944	7590	07/25/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			PHAM, HAI CHI	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/718,697

Applicant(s)

TAIRA ET AL.

Examiner

Hai C. Pham

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## FINAL REJECTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-2, 4-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Masuda (Pub. No. U.S. 2004/0008247).

Masuda discloses an optical writing unit, which comprises a plurality of light-emitting diode-array chips arranged in a row and a method for driving the light-emitting diode array elements formed on the chips in a row, the method comprising:

- determining the beam profiles of the plural light-emitting elements including joints of the light-emitting diode-array chips (determining the exposure intensity distribution of all the light-emitting elements including the ones

- located at the edges of the light-emitting diode-array chips such that the interval  $P_a$  between the light emitting points at the joining chips are determined),
- determining distance between the light-emitting elements at the joint of the light-emitting chips from distance between peaks of the beam profiles (e.g., center-of-gravity interval of the optical spots from the measured exposure intensity distribution) (paragraphs [0102]-[0103]),
  - OR slicing the beam profiles at a predetermined level and determining the distance between the light-emitting elements at the joints of the light-emitting chips from the distance between median points of the sliced plane (based on the cross-section or exposure area of the exposure intensity distribution taken at the threshold value level, wherein the interval between center-of-gravity positions of the cross-section intensity distributions is obtained) (paragraphs [0143]-[0144]),
  - comparing the determined distance  $P_a$  between the light-emitting elements with the resolution pitch ( $P$ ) of the light-emitting print head, and raising or lowering the light amount of the light-emitting elements of at least one side of the joints of the light-emitting chips when the determined distance between the light-emitting elements is longer or shorter, respectively, than the resolution pitch (increasing or lowering the light volume of the light-emitting elements on and near the edges of the light-emitting diode-array chips

depending on whether  $P_a > P$  or  $P_a < P$ , the increased or lowered light amount being performed via IC drivers 329 and 330) (paragraphs [0090]-[0096]).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda in view of Ishii (JP 2001-080111).

Masuda fails to expressly disclose the raised or lowered light amount being based on the difference between the distance at the joints of the light-emitting diode array chips and the resolution pitch.

Ishii, an acknowledged prior art, discloses the percentage of the increase of the light amount at the joints between the of the light-emitting diode array chips being based on the distance difference between the distance at the joints of the light-emitting diode array chips and the resolution pitch, e.g., based on the standard pitch of 63.5  $\mu\text{m}$  at the resolution of 400 dpi (English translation, paragraphs [0035]-[0036]).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to adjust the light quantity of the light-emitting elements at the edges of the light-emitting diode array chips in the device of Masuda based on the difference between the distance at the joints of the light-emitting diode array chips and

the resolution pitch as taught by Ishii. The motivation for doing so would have been to provide a smooth and uniform increase or decrease of the light quantity of the light-emitting elements at the edges of the light-emitting diode array chips.

### ***Response to Arguments***

5. Applicant's arguments filed 05/24/05 have been fully considered but they are not persuasive.

Applicants argue that "Masuda does not or suggest determining beam profiles of the plural light-emitting elements, or determining the distance between the light-emitting elements at the joints of the light-emitting chips from the distance between peaks of the beam profiles of the light-emitting elements". The examiner respectfully disagrees. It is noted that the claimed beam profile is defined as the Gaussian intensity distribution of the light-emitting element as shown in Figs. 4 and 5 of the current Application. Masuda teaches measuring the distance between the light-emitting elements at the joints of the light-emitting chips as well as the distance between adjacent light-emitting elements disposed on the light-emitting chips by determining the beam profile of each of the light-emitting elements, that beam profile is shown as an exposure intensity distribution in Fig. 9 of Masuda, which is the same as the claimed beam profile being defined as the Gaussian intensity distribution of the light-emitting element as shown in Figs. 4 and 5 of the current Application. Masuda proposes to measure the distance between the light-emitting elements at the joints of the light-emitting chips from the distance between the center-of-gravity of the optical spots (paragraphs [0102]-[0103]). Since the exposure

Art Unit: 2861

intensity distribution has a Gaussian distribution, the peak of the exposure intensity distribution or beam profile coincides with the center-of-gravity of the corresponding optical spot. Masuda further proposes as an alternative method to measure the distance between the light-emitting elements at the joints of the light-emitting chips from the distance between the center-of-gravity positions of the cross-section intensity distribution (paragraphs [0143]-[0144]). Again, since the exposure intensity distribution has a Gaussian distribution, the median point of the sliced plane made by slicing the beam profile or exposure intensity distribution at a predetermined level (e.g., threshold level) coincides with the center-of-gravity position of the cross-section intensity distribution.

Masuda thus discloses all the claimed limitations set forth in each of the claims 1-2 and 4-7.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HAI PHAM  
PRIMARY EXAMINER

July 21, 2005